

**SCHEME AND SYLLABUS FOR RECRUITMENT TO THE POST OF ASSISTANT
STATISTICAL OFFICERS IN DIRECTORATE OF ECONOMICS & STATISTICS**

SCHEME

(Degree standard)

PART-A) WRITTEN EXAMINATION (Objective Type)				
PAPER-1	General Studies	150 Marks	150 Qns.	150 Minutes
PAPER-2	Concerned Subject (one subject only)	150 Marks	150 Qns.	150 Mts.
PART-B)	INTERVIEW:	30 Marks.		

The candidates have to choose one subject from the following subject for Paper-2

01. Economics	02. Statistics
03. Mathematics	04. Computer Science

N.B:

1. The selections to these posts will be based on the total marks obtained by the candidates at the written examination and oral test taken together subject to the rule of reservation.
2. The eligible candidates will be called for an interview at the ratio of 1:2 with referenced to the number of vacancies duly following the special representation as laid down in General Rule-22 and 22-A of A.P. State and Subordinate Service Rules.
3. Appearance to Written Examination (two papers) and Oral Test is compulsory for final selection.
4. For Paper-2 i.e., concerned subject the candidates must possess second class Degree in B.A / B.Sc., with a group comprising of any two of the above four subjects.

SYLLABUS

PAPER-I: GENERAL STUDIES

General Science

Current Events of National and International Importance.

History of India and Indian National Movement. India and World Geography.

General Mental Ability.

Questions on General Science will cover General appreciation and understanding of science including matters of every day observation and experience, as may be expected of a well educated person who has not made a special study of any particular scientific discipline. In current events, knowledge of significant national and international events will be tested. In History of India, emphasis will be on broad general understanding of the subject in its social, economic and political aspects. Questions on Indian National Movement will relate to the nature and character of the nineteenth century resurgence, growth of Nationalism and attainment of independence. In geography emphasis will be on geography of India. Questions on geography of India will relate to physical, social and economic geography of the country, including the main features of the Indian agricultural and natural resources. On general mental ability, the candidates will be tested on reasoning and analytical abilities.

PAPER-2: CONCERNED SUBJECT

ECONOMICS

- I. 1. National Economic Accounting, National Income Analysis Generation and Distribution of Income and related aggregates: Gross National Product, Net National Product, Gross Domestic Product & Net Domestic Product (at market prices and factor costs): at constant and current prices.
2. Price Theory: Law of Demand: Utility analysis and Indifference Curve techniques, Consumer equilibrium, Cost curves and their relationships;

- equilibrium of a firm under different market structures; pricing of factors of Production.
3. Money and Banking: Definitions and functions of money (M1, M2 M3): Credit creation; Credit; Sources, Costs and availability; theories of the Demand for money.
 4. International Trade: The theory of comparative costs; Ricardian Hockseher Ohlin; the balance of payments and the adjustment mechanism. Trade theory and economic growth and development.
 5. Economic growth and development; Meaning and measurement; characteristics of under development; rate and pattern, Modern Growth; Sources of growth distribution and growth-problems of growth of developing economics.
- II. Indian Economy-India's economy since Independence; trends in population growth since 1951, Population and poverty; general trends in National Income and related aggregates; Planning in India Objectives, Strategy and rate and pattern of growth; problems of Industrialisation strategy; Agricultural growth since Independence with special reference to food grains; unemployment; nature of the problem and possible solution, Public Finance and Economic Policy.
- III. Identification of backward regions and the problems of regional development with special reference to Andhra Pradesh.

BASIC STATISTICS - ELEMENTARY STATISTICAL METHODS.

Origin and Development of Statistics - Definition of Statistics - Importance and scope of Statistics - Limitations of Statistics - Distrust of Statistics - Collection of data - Census Vs. sample enumeration - Primary and Secondary sources of data - Preparation of schedules and questionnaires - Classification and tabulation of data - Presentation of data - Frequency distributions.

Measures of Central Tendency - Requisites for an ideal measure central tendency / Mean, Median and Mode for grouped and ungrouped data - Measures of Dispersion - Range - Quartile Deviation - Mean Deviation - Standard Deviation - Skewness and Kurtosis.

Correlation - Scatter Diagram - Karlpearson's Co-efficient of Correlation - Rank Correlation - Regression - Lines of regression - Regression Coefficients - Simple Random Sampling - Stratified Sampling - Sampling and Non-sampling Errors.

Index Numbers - Construction of Index Numbers - Fixed base and Chain base - Cost of living index numbers by aggregate expenditure method - Family budget methods - Fisher's Ideal Index - Time reversal and facts reversal tests.

STATISTICAL ANALYSIS AND INTERPRETATION OF DATA.

Awareness and Appreciation of data relating to different sectors of economy. Identification of trends and interpretation of data over time and space. Drawing inferences based on the trends reflected by the data - Representation of data through diagrams and graphs - Statistical Analysis of data with simple statistical measure.

MATHEMATICS

Real Analysis: Continuity and differentiability of real functions. Uniform continuity, Sequences and series of functions. Uniform convergence. Functions of bounded variation. Riemann integration.

Complex Analysis: Analytic functions. Cauchy's theorem Cauchy's integral formula. Laurent's series. Singularities. Theory of residues – Conformal mapping.

Abstract Algebra: Groups – Sub-groups – normal subgroups Quotient group Homomorphism – Fundamental theorem of Homomorphism, Permutation groups: Cayley's theorem – Rings – Subrings – Ideals – Fields – Polynomial rings.

Linear Algebra: Vector spaces – Basis and dimension – Linear transformations – Matrices – Characteristic roots and characteristic vectors – systems of linear equations – Canonical forms – Cayley – Hamilton theorem.

Differential Equations: First order ordinary differential equations (O.D.E) and their solutions – Singular solutions. Initial value problems for first order O.D.E. General theory of homogeneous and non-homogeneous linear differential equations, variation of parameters. Elements of first order partial differential equations (PDE).

Co-ordinate Geometry of Three Dimensions: The Plane – The straight-line – Sphere and cone.

COMPUTER SCIENCE (Degree Standard)

Introduction to Computers: Evolution and generation of Computers Number Systems; Binary, Octal, Hexa decimal numbers systems, converting from one number system to another. Character codes, data representation, fixed and floating, binary arithmetic, Boolean algebra, Boolean functions, logic gates, logic circuits.

Basic Computer Organization: Instruction formats, addressing modes, Instruction cycle, ALU, Control unit, Micro programmed control circuit, Memory, RAM, ROM, Cache memory, Secondary memory, Input and output devices, Interrupt and DMA.

Computer Programming: 'C' language, data types, variables, constants, expressions, statements, control structures, loops, functions, pointers and arrays, file-handling. Object oriented programming with C++: Classes, objects, constructors and destructors, function and operator overloading, inheritance, virtual functions, function overriding, runtime polymorphism, multiple inheritance, streams and files.

Data Structures: arrays, storage structure for arrays, stacks and queues operations and their applications, linked lists, dynamic memory allocation, linked stacks and queues, circular queues, abstract data types, Trees, binary trees, tree traversals, AVL trees, graphs, definition, representation of graphs, DFS and BFS.

Operating System: Types of Operating Systems, functions of operating systems, Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, scheduling algorithms, Memory management and virtual memory, File systems, I/O systems, Protection and security.

Databases: ER-model, Relational model, Reducing E-R Diagrams to Tables, Query languages (SQL), DDL, DML, Normalization, File structures, sequential files, indexing, B and B+ trees, Hashing, Transactions and concurrency control

Date:1/07/08

Sd/-
Secretary